CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 96-032
NPDES NO. CA0004979

GENERAL CHEMICAL CORPORATION
PITTSBURG, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. General Chemical Corporation hereinafter called the discharger, by application dated March 15, 1995 has applied for reissuance of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger manufactures electronic grade chemicals (e.g. HCL, HF, HNO_3, H_2SO_4, NH_4F, CH_3COOH, NH_4OH, H_3PO_4), aluminum sulfate, and packages various inorganic and organic solvents (e.g. Butyl Acetate and Xylene). The processes, although highly technical, are best characterized as purification whereby commercial grade chemicals are purchased as raw materials and processed through numerous steps to meet the purity requirements of the semiconductor industry. These steps vary by specific chemical and may include distillation, ion exchange, absorption, chemical treatment, filtration and blending.

3. The discharger discharges intermittently into Suisun Bay. In general, the discharger only needs to discharge four to five times a week with an average flow rate of 0.28 million gallons per day (MGD) of wastewater via an outfall at a point 200 feet from shore at a depth of about 20 feet (Lat. 38 02'48"N, Long. 121 59' 10"W). The discharge is reported to get an initial dilution ratio of at least 10:1.

4. The wastes consist of water from process area air vent scrubbers, non-contact cooling water from the acid purification system, the lab scrubber process equipment flush waters, boiler blowdown, quality assurance/control sink drains and stormwater from certain portions of the site.

   Washdown and air vent scrubber water from the solvent packaging area, and stormwater runoff from mixed acid etchants area, buffered oxide etchants area, and stripper solution production areas is collected in tanks. This waste is hauled off site for disposal.

   All water from the alum process area is segregated and reused in the alum production process. There is no discharge from the alum area.

5. Wastewater treatment consists of pH neutralization and metal precipitation by chemical addition. This wastewater is stored in a on site unlined natural lagoon until discharge. Sanitary wastewater is treated in a septic tank with effluent disposal to the Delta Diablo Sanitation District, Permit No. 0281109-C.

6. The discharge is presently governed by Waste Discharge Requirement, Order No.90-099 which allows discharge into Suisun Bay.

7. The Board adopted a Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) in June 21, 1995, and the State Water Resources Control Board (State Board) approved it on July 20, 1995. The Office of Administrative Law (OAL) approved it on November 13, 1995. The Basin Plan identifies beneficial uses and water quality objectives for surface and ground waters in the region, as well as discharge prohibitions and certain effluent limitations intended to protect beneficial uses.

8. The beneficial uses of Suisun Bay and contiguous water bodies are:

   a. Water contact recreation
   b. Non-contact water recreation
   c. Wildlife habitat
   d. Preservation of rare and endangered species
   e. Estuarine habitat
   f. Fish migration and spawning
   g. Industrial service supply
   h. Navigation
   i. Shellfish harvesting
   j. Commercial and sport fishing

9. Effluent limitation and toxic effluent standards established pursuant to Section 208(b), 301, 304 and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

10. The establishment of many of the chemical specific limitations depend upon the salinity characteristics of the receiving waters. Data contained in the 1993 Annual Report for San Francisco Estuary Regional Monitoring Program show that the salinity of the receiving water is below 5 parts per thousand greater than ninety-five percent of the time. Based on these data, the salinity in the vicinity of the discharge is fresh in character.

11. The Basin Plan establishes a narrative objective for acute and chronic toxicity in the Bay. In part, it states that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include but are not limited to, decreased growth rate and decreased reproductive success of resident or indicator species...."

12. Because of the nature of the waste and the discharge location, this discharge poses a reasonable potential for causing exceedance of the acute toxicity objective. This Order specifies acute toxicity effluent limits for this waste stream.

13. The Basin Plan initiated the Effluent Toxicity Characterization program (ETCP) in 1986. The ETCP required certain dischargers to monitor their effluent using critical life stage toxicity tests for the purpose of generating information to allow development of chronic toxicity effluent limitations. General Chemical participated in the ETCP with testing of influent Contra Costa Canal Water, and effluent using *Ceriodaphnia* test. The results of the tests did not show any contribution of chronic toxicity by General Chemical. Based on these data and considering the nature of the waste, this waste stream poses a low potential to cause chronic toxicity in receiving waters. Therefore, chronic toxicity effluent limitations for this major discharge have not been included in this Order.

14. Effluent limits for aluminum, formaldehyde, arsenic, chromium, cyanide, silver, zinc and PAH specified in Order No. 90-099 have been deleted from the effluent limits of this Order. The basis for this is that the discharge of these pollutants by General Chemical does not pose a reasonable potential to cause, or contribute to an excursion above any numeric or narrative water quality objective. This is based on evaluation of self monitoring data from the past five years (1990 to 1995). These data show that the discharge concentrations of these pollutants are not at levels of concern.

15. Pursuant to 40 CFR 122.44, "Establishing Limitations, Standards, and Other Permit conditions" NPDES permit should also include toxic pollutant limitations if the discharger uses or manufactures a toxic pollutant as an intermediate or final product or byproduct. This permit may be modified prior to the expiration date, pursuant to 40 CFR 122.62 and 124.5, to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through the monitoring program included as part of this Order.

16. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000 of Division 13) of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

17. The Board has notified the discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

18. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED THAT General Chemical Corporation in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

2. The use of algaeacides or anti-fouling additives in the cooling water system is prohibited.

3. Direct discharge of domestic sanitary waste to the treatment lagoon or to surface waters of the state is prohibited.

4. Discharge of process waste from aluminum sulfate manufacture is prohibited.

5. Discharge of air vent scrubber water and washdown water from the organic solvents packaging plant, and stormwater runoff from the mixed acid etchants, buffered oxide etchants, and stripper solution production areas is prohibited.

6. Discharges of wastewaters, materials, or other wastes other than storm water which are not otherwise authorized by this Order, to a storm drain system or waters of the State are prohibited.

B. Effluent Limitations

1. Effluent discharge shall not exceed the following limits:

Constituents	Units	30-day Average	Weekly Average	Maximum Daily
TSS	mg/l	30	45	
BOD	mg/l	30	45	
Settleable matter	ml/l-hr	0.1		0.2
Fluoride	lb/day	30		55
Lead	µg/l			56
Mercury	µg/l			1
Nickel	µg/l			71

2. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

3. In any representative set of samples, the waste as discharged shall meet the following limit of quality:

TOXICITY: The survival of stickleback and rainbow trout in a 96 hour static renewal bioassay of the effluent shall be a 11-sample medium value of not less than 90 percent survival, and a 90 percentile value of not less than 70 percent survival. The 11-sample median and 90th percentile effluent limitations are defined as follows:

11 sample median: If five or more of the past ten or fewer samples show less than 90 percent survival, then survival of less than 90 percent on the next sample represents a violation of the effluent limitation.

90th percentile: If one or more of the past ten or fewer samples show less than 70 percent survival, then survival of less than 70 percent on the next sample represents a violation of the effluent limitations.

4. The maximum temperature of the discharge shall not exceed the ambient receiving water temperature by more than 20 ^{o}F nor shall it exceed 90 ^{o}F.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited microscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	7.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	pH	Variation from natural ambient pH by more than 0.5 pH unit.
c.	Un-ionized ammonia	0.025 mg/l as N annual median 0.4 mg/l as N maximum

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. **Storm Water Pollution Prevention Plan:** General Chemical shall update and submit a Stormwater Pollution Prevention Plan (SWPPP) acceptable to the Executive Officer by August 1, 1996. The SWPPP shall comply with the requirements contained in the attached Standard provisions. Specifically, the SWPPP shall be updated to address all areas contributing storm water discharge from facilities owned and operated by General Chemical. It shall include pollution prevention measures. The measures may first include a study to determine sources of contaminants, followed by increased frequency of sweeping, cleaning and/or erosion control measures for certain areas. The updated SWPPP shall be implemented by October 1, 1996.

Henceforth, General Chemical shall evaluate and update annually the SWPPP, or sooner if there is a change in the operation of the facility which may substantially affect the quality of the storm water discharged from the facility.

2. Self-Monitoring Program: General Chemical shall conduct monitoring in accordance with the attached Self-Monitoring Program as adopted by the Board. The Self-Monitoring Program may be amended by the Executive Officer pursuant to 40 CFR 122.62, 122.63, and 124.5.

3. Pursuant to USEPA regulations 40 CFR 122.44, 122.62, and 124.5, the permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through the monitoring program included as part of this Order.

4. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to Environmental Protection Agency regulations (40 CFR 122.41K).

5. Pursuant to Environmental Protection Agency regulations [40 CFR 122.42(a)] the Discharger must notify the Regional Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutant.

6. This Order includes all items of the attached "Standard Provisions, and Reporting Requirements" dated August 1993. In part, these Standard Provisions require submittal of reports on Safeguards to Electric Power Failure, and Spill Prevention and Contingency Plan within 90 days of adoption of this Order.

7. The requirements prescribed by this Order supersede the requirements prescribed by Order 90-099 adopted on July 18, 1990. Order No. 90-099 is hereby rescinded.

8. **Permit Expiration:** This Order expires March 20, 2001. General Chemical must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

9. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on the date of adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the

Regional Administrator objects to its issuance the permit shall not become effective until such objection is withdrawn.

10. General Chemical shall comply with all sections of this Order immediately upon adoption.

I, Loretta K. Barsamian, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on March 20, 1996.

Loretta K. Barsamian
Executive Officer

Attachments:

Figure 1 - Discharge Locations
Figure 2 - Flow Diagram
Standard Provisions and Reporting Requirements, August 1993
Self Monitoring Program - Part A (8/93), and part B

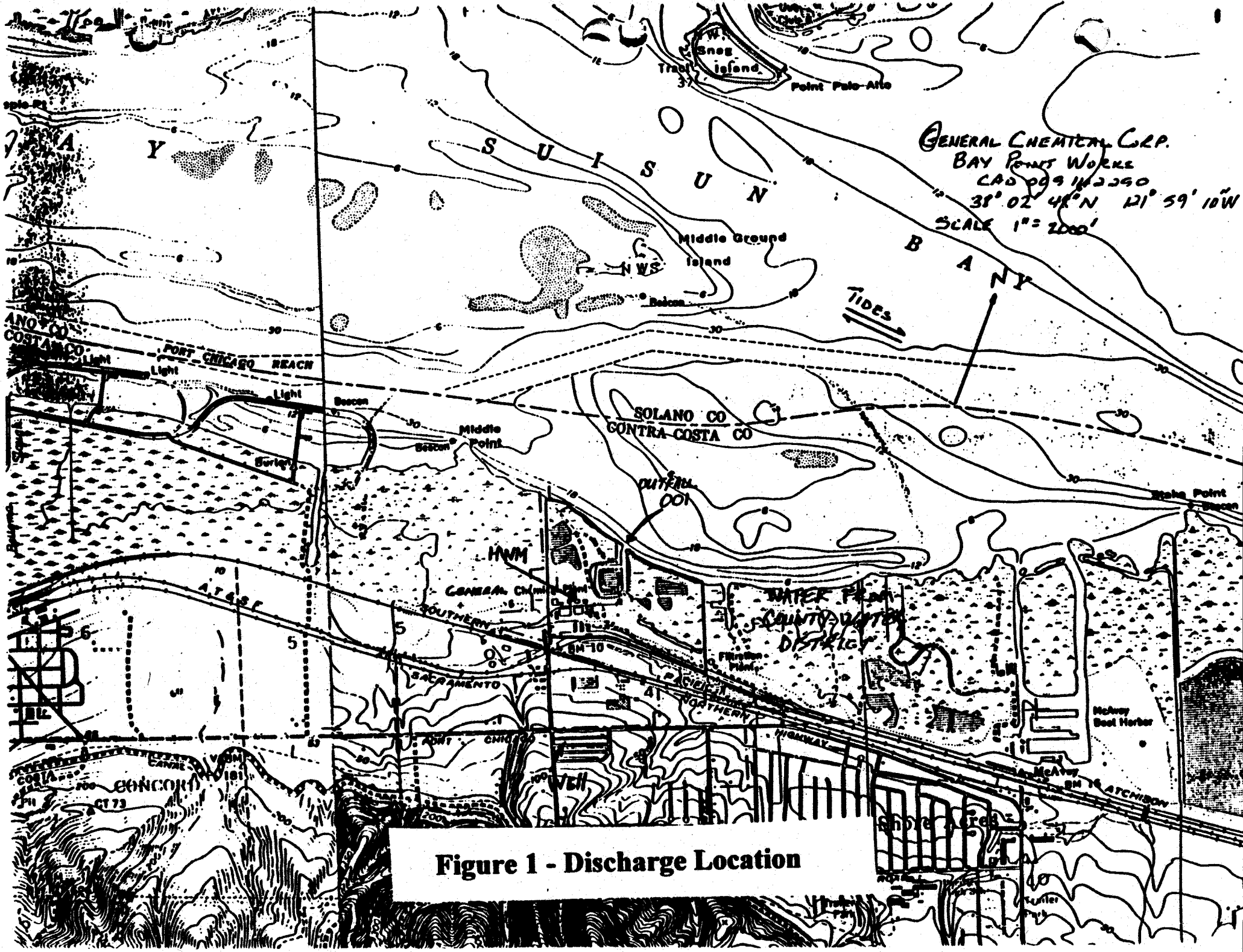

Figure 1 - Discharge Location

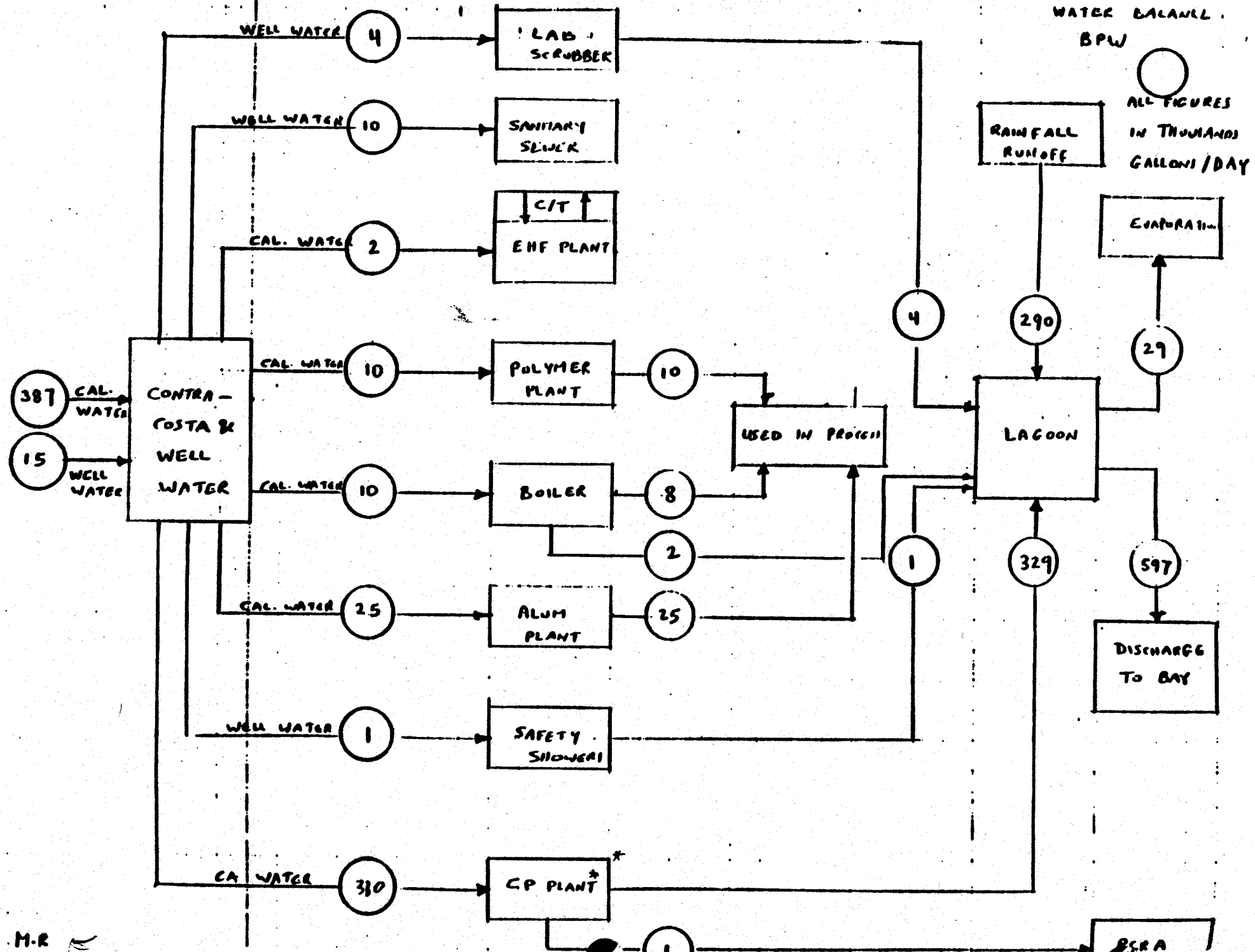

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Figure 2 - Process Flow Diagram

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

GENERAL CHEMICAL CORPORATION
NICHOLS ROAD FACILITY
PITTSBURG, CONTRA COSTA COUNTY

NPDES NO. CA0004979
ORDER NO. 96-032

CONSISTS OF

PART A
DATED AUGUST 1993

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
I	At a point in the water intake headworks at which a sample representative of the water being utilized in the plant can be collected. (A sketch showing the location of this sampling station shall accompany each report)

B. EFFLUENT

Station	Description
E-001	At a point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present before discharge to Suisun Bay. (A sketch showing the location of this sampling station shall accompany each report.)

C. RECEIVING WATERS

Station	Description
C-1	At a point in Suisun Bay located in the center of the waste plume.
C-R1	At a point in Suisun Bay located not more than 20 feet offshore about 1000 feet westerly from the outfall.
C-R2	At a point in Suisun Bay located not more than 20 feet offshore about 1000 feet easterly from the outfall.

A sketch showing the locations of the above sampling stations shall accompany each report.

D. LAND OBSERVATIONS

Station	Description
L-1 thru L-1-'n'	Located along the perimeter levees of the lagoon at equidistant intervals not to exceed 200 feet.
P-1 thru P-1-'n'	Located along the periphery of the process, storage, and handling areas at equidistant intervals not to exceed 500 feet.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis is given in Table I (attached).

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 96-032.

2. Is effective on March 20, 1996.

3. May reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

Loretta K. Barsamian
Executive Officer

Attachments:

Table I. Schedule for Sampling, Measurements, and Analysis

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	**I**		**E-001**				**All C Stations**			**All L Stations**		**All P Stations**
Type of Sample	G	C-24	G	C-24	Cont.	O	G	C-24	O	G	O	O
Flow Rate (mgd)	D			D								
BOD, 5 day, 20 ^{o}C or COD (mg/l & kg/day)				M								
Settleable Matter (ml/l-hr)	2/Y		2W									
Total Suspended Matter (mg/l & kg/day)		W		W								
Toxicity (% survival)				M								
Ammonia Nitrogen (mg/l & kg/day)		2/Y		M								
Turbidity (TU)			M				Q					
pH (pH Units)					Cont.		Q					
Dissolved Oxygen (mg/l and % Saturation)							Q					
Temperature (^{o}C)					Cont.		Q					
Apparent color (Color Units)						2/W			M			
Sulfides (if DO ,5.0 mg/l) Total & Dissolved							Q					
Cadmium (µg/l& kg/day)		2/Y		Q								

Sampling Station	**I**		**E-001**				**All C Stations**			**All L Stations**		**All P Stations**
Type of Sample	G	C-24	G	C-24	Cont.	O	G	C-24	O	G	O	O
Copper (µg/l & kg/day)		2/Y		Q								
Lead (µg/l & kg/day)		2/Y		2/Y								
Mercury (µg/l & kg/day)				Q								
Nickel (µg/l & kg/day)		2/Y		2/Y								
Aluminum (µg/l & kg/day)				2/Y								
Arsenic (µg/l & kg/day)				2/Y								
Chromium (µg/l & kg/day)				2/Y								
Cyanide (µg/l & kg/day)				2/Y								
Silver (µg/l & kg/day)				2/Y								
Zinc (µg/l & kg/day)				2/Y								
Phenols (µg/l & kg/day)				2/Y								
All Applicable Standard Observations						M			M		M	
Un-ionized Ammonia as N (mg/l)							Q					
Fluoride (mg/l & lb/day)		2/Y		M								
Observe for Containment of Runoff											E	

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24 hour
Cont = continuous sampling
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations

FREQUENCY OF SAMPLING

E = each occurrence	2/W = 2 days per week	2W = every 2 weeks
W = once each week	2/M = 2 days per month	3M = every 3 months
M = once each month	2/Y = once in March and	Cont = continuous
Y = once each year	once in September	

Q = quarterly, once in March, June, September and December